

# **TECHNICAL SPECIFICATIONS**

# WASHINGTON STATE FERRIES

## M.V. SKAGIT DRYDOCKING

CONTRACT NO. 00-6923

### TECHNICAL SPECIFICATIONS

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## M.V. SKAGIT DRYDOCKING

### CONTRACT NO. 00-6923

#### TECHNICAL SPECIFICATION

**For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to accomplish each and every Bid Item unless otherwise specified.**

**The Specification Item sub-titles in brackets are for WSF internal use only, for Life Cycle Cost modeling. Bidders should ignore such bracketed sub-titles.**

1 **1. DRYDOCK VESSEL**

2 {MAINTENANCE}

3 M.V. SKAGIT Vessel Particulars:

4 Length: 112 ft., Beam: 25 ft., Draft: 8 ft., Gross Tons: 96.

5 A. Provide labor, material and equipment to drydock Vessel for cleaning, painting,  
6 inspections, the work specified herein and any necessary repairs.

7 B. Using **Attachment No. 2** "BLOCK POSITION FORM" as a guide, block the  
8 Vessel to expose the last used block positions. Within twenty-four (24) hours of  
9 Docking, provide three (3) copies of the block position drawing to the WSF  
10 Inspector indicating the block positions used.

11 C. The Vessel shall be Drydocked in such a way as to allow the shafts and rudders  
12 to be removed if necessary.

13 **2. TEMPORARY SERVICE**

14 {MAINTENANCE}

15 A. Install one (1) telephone on board in a location designated by the Vessel Staff  
16 Chief Engineer. The telephone is to have one (1) outside line with toll-free  
17 access to Seattle and vicinity and, if different, one (1) line for local numbers.  
18 The telephone shall have touchtone service if available from the Contractor's  
19 telephone system.  
20

- 1 B. Provide and maintain electricity, water, safe lighted gangway and trash removal  
2 services while Vessel is in the Contractor's facility.
- 3 C. Provide Safety and Security for the entire Vessel throughout this Contract period  
4 until such time as the WSF has accepted redelivery of the Vessel. Every  
5 reasonable precaution shall be taken to protect the Vessel from the hazards of  
6 fire, flooding, pilferage, malicious damage, and other events including  
7 cataclysmic phenomena of nature.
- 8 D. Provide and maintain comprehensive and effective fire prevention and fire  
9 detection, and fire fighting programs and systems sufficient to ensure the safety  
10 and integrity of the Vessel. Provide personnel trained in shipboard fire fighting  
11 techniques and also trained to cooperate with and assist local fire fighting  
12 organizations. Provide sufficient shore fire lines to ensure an adequate supply of  
13 fire fighting water, at sufficient pressure, and maintain an adequate number of  
14 tested fire-hoses aboard the Vessel to effectively fight fires at any location in the  
15 Vessel.
- 16 E. Provide and maintain portable fire extinguishers in sufficient quantity, and of the  
17 appropriate type, to combat local fires of any class. Provide sufficient fire  
18 watches, including roving watches as may be required, to ensure that fires that  
19 may be inadvertently started by welding sparks or heat, electrical malfunction, or  
20 spontaneous combustion are detected, reported and promptly extinguished.

21 **3. SEA VALVE INSPECTION**  
22 **{MAINTENANCE}**

- 23 A. Remove, overhaul, and reinstall the below listed valves. All 2 inch and below  
24 valves will be replaced in kind with new USCG approved sea valves. New and  
25 overhauled valves shall be inspected and hydrostatically tested. Conduct valve  
26 disc to seat bluing check. The inspection, hydrostatic test and seat bluing will be  
27 in the presence of, and to the satisfaction of the WSF and USCG Inspectors and  
28 the Vessel Staff Chief Engineer. Submit three (3) copies of the completed test  
29 results to the WSF Inspector. Replaced sea valves shall remain Vessel property.

<u>QTY</u>	<u>SERVICE</u>	<u>SIZE</u>	<u>TYPE</u>
a) 1	No. 1 Main Engine: Sea Suction	3"	S/S Gate
b) 1	Overboard	4"	Gate
c) 1	No. 2 Main Engine: Sea Suction	3"	S/S Gate
d) 1	Overboard	4"	Gate
e) 1	No. 3 Main Engine: Sea Suction	3"	S/S Gate
f) 1	Overboard	4"	Gate

1		<u>QTY</u>	<u>SERVICE</u>	<u>SIZE</u>	<u>TYPE</u>
2		g) 1	No. 4 Main Engine: Sea Suction	3"	S/S Gate
3		h) 1	Overboard	4"	Gate
4		i) 1	No. 1 S / S Gen. Sea Suct.	2"	S/S Gate
5		j) 1	Overboard	2"	S/S Gate
6		k) 1	No. 2 S / S Gen. Sea Suct.	2"	S/S Gate
7		l) 1	Overboard	2"	S/S Gate
8		m) 1	Salt Water Service Pump	3"	S/S Gate
9		n) 4	Stern Tube Cooling Water	½"	S/S Ball
10		o) 2	A/C Cooling Overboard	1 ½"	Bronze Gate screw
11		p) 1	Fire Pump Overboard	2"	Bronze Gate screw
12		q) 1	Sewage Overboard	2"	Bronze Gate screw
13		r) 2	A/C Drain Overboard	1"	Bronze Gate Screw
14	B.	Sea valves shall be inspected by the WSF and USCG Inspectors and Vessel Staff			
15		Chief Engineer for the following:			
16		a)	General material condition.		
17		b)	Valve disc to valve seat contact.		
18		c)	Proper mechanical operation.		
19	C.	After inspection, reassemble/install valves using new braided Teflon valve stem			
20		packing, new gaskets and isolators on all flange connections.			
21	D.	With the above valves removed, open and clean all sea strainers and baskets, and			
22		all piping from the strainers to the hull, using a water lance, air, or high-pressure			
23		water to remove marine growth. Pressure wash clean the bilges. Upon			
24		completion of pressure wash remove and dispose of water, oil, and debris.			
25	4.	<b>HULL ANODE RENEWAL</b>			
26		{MAINTENANCE}			
27	A.	Renew bolt-on anodes as follows:			
28		a)	Four 6" x 6" x 1¼" (one aft of each stern tube)		
29		b)	Four 6" x 6" x 1¼" (one in the V on each strut)		
30		c)	Four 6" x 15" x 2" (one on the hull above each strut)		
31		d)	Three 6" x 12" x 1¼" (on the transom)		

- 1 B. Cut anodes to size, and weld on tabs for strap length to fit in existing locations.  
2 Lock wire or weld the bolt heads or nuts to the straps to secure the anode in  
3 place.

4 **5. RUDDER INSPECTION**  
5 {MAINTENANCE}

- 6 A. Take and record clearances of the port and starboard rudder shafts to lower  
7 rudder stock bearings. Submit three (3) copies of the readings to the WSF  
8 Inspector.

9 **6. PROPELLER INSPECTION**  
10 {MAINTENANCE}

- 11 A. Polish the four (4) propellers by power disc sanding using 80 grit or finer  
12 abrasive. Thoroughly clean propeller blades and hubs for nondestructive testing.

- 13 B. Conduct a mag-particle or dye penetrate test for surface cracks on the blades and  
14 hub in the presence of the WSF and USCG Inspectors and the Vessel Staff Chief  
15 Engineer. Submit three (3) copies of a written report of findings to the WSF  
16 Inspector within twenty-four (24) hours of test completion.

17 **7. SHAFTING INSPECTION**  
18 {MAINTENANCE}

- 19 A. Within twenty-four (24) hours of initial drydocking, take and record the  
20 clearances for each of the four (4) shafts, the inboard cutlass bearings, outboard  
21 cutlass bearings, and the strut bearings. Submit three (3) copies of the as found  
22 readings to the WSF Inspector.

- 23 B. In the presence of the WSF Inspector and the Vessel Staff Chief Engineer,  
24 conduct a run out check of the four (4) tail shafts. Submit three (3) copies of the  
25 run out readings to the WSF Inspector.

- 26 C. Open, remove packing, clean and flush the stern tube packing glands, packing  
27 boxes, and cooling water lines for inspection by the WSF Inspector and Vessel  
28 Staff Engineer. Upon satisfactory inspection and completion of all related  
29 shafting work, close up stern tube glands using five (5) rings of new waxed flat  
30 9/16" square packing in each of the four (4) shaft packing glands, and provide one  
31 (1) spare ring for each of the four (4) packing glands, and stainless steel hose  
32 clamps. Cut packing for proper end gap as recommended by the manufacture.  
33 Adjust all packing glands four (4 total) during a short sea trial after the Vessel is  
34 undocked to establish a normal leak off rate to the satisfaction of the WSF  
35 Inspector and Vessel Staff Chief Engineer.  
36

1   **8.   VOIDS**

2       {MAINTENANCE}

3       A.     Open the four (4) Voids for inspection by the WSF and USCG Inspectors.

4       **NOTE:**

5       The two (2) Voids located between the engine room and the generator room, have access  
6       through bolt on covers.

7       B.     Provide and maintain, for the duration of the job, a chemist certificate for “SAFE  
8       FOR WORKERS,” all required ventilation and temporary lighting required to  
9       perform the inspection.

10      C.     Upon completion of the inspection, close up the Voids in good order, using new  
11      grommets and gaskets.

**PAINTING OF VESSEL AND HULL PRESERVATION**

**Special Note**

**(ATTACHMENT NO. 1)**

**Area Preparation, Surface Preparation, Paint Coatings, and Inspection for Vessel's hull, curtain plates, casing and super structure shall be in accordance with Washington State Ferries Marine Coating Specification 1/03 unless otherwise specified in the following Specifications**

12   **9.   FRESH WATER WASH OF VESSEL HULL**

13       {MAINTENANCE}

14      A.     Within twenty-four (24) hours upon Drydocking Vessel, perform a Low-Pressure  
15      Water Cleaning (LP WC) at **3,000 - 3,500 PSI** using fan jet tips in accordance  
16      with SSPC-SP 12/NACE 5 and using INTERNATIONAL GMA 571 OIL AND  
17      GREASE REMOVER in accordance with the manufactures instructions. The  
18      wash wand nozzle shall be held no more than twelve inches (12”) from the hull  
19      during the wash to insure all salt contamination, marine fouling, algae and slime.  
20      is removed from the hull. The wash shall leave no visible growth or residue after  
21      the hull dries from washing.



- 1 B. Remove sea suction strainer plates from the hull, and the inline strainer baskets  
2 from the interior piping, and accomplish a high pressure water lance cleaning of  
3 the piping, from the inline strainer basket housing to the hull, for the piping  
4 associated with the valves listed in the **SEA VALVE INSPECTION** Item.  
5 Upon completion of cleaning reinstall the strainer plates, and the inline strainer  
6 baskets.

7 **10. FRESH WATER WASH SUPERSTRUCTURE**  
8 **{STRUCTURAL PRESERVATION}**

- 9 A. Perform a Low-Pressure Water Cleaning (LP WC) at **3,000 - 3,500 PSI** using fan  
10 jet tips in accordance with SSPC-SP 12/NACE 5 and using INTERNATIONAL  
11 GMA 571, oil and grease remover, in accordance with the manufactures  
12 instructions. **DO NOT ALLOW GMA 571 TO DRY ON SURFACE.** Pressure  
13 washer wand nozzle shall be held no more than twelve inches (12”) from the  
14 surface being washed.
- 15 B. Upon completion of the superstructure painting, clean the exterior of all  
16 windows.

17 **11. PREPARATION FOR EXTERIOR HULL PAINTING**  
18 **{MAINTENANCE}**

- 19 A. Provide covering and protection on propellers, propeller bearings, rudder stock,  
20 rudder and bearings, exposed shafting, any removed sea valves, all through-hull  
21 penetrations and entrance ways to protect and prevent grit blast material from  
22 causing damage or entering the Vessel. All protective coverings and hull  
23 penetration blanks shall be inspected by the WSF Inspector and Vessel Staff  
24 Chief Engineer prior to grit blasting.

25 **12. GRIT / HIGH PRESSURE BLASTING OF THE HULL**  
26 **{MAINTENANCE}**

27 **NOTE:**

28 The Contractor shall have the option to **UHP-WJ-2L, Ultrahigh-Pressure Water**  
29 **Jetting** only if the hull profile is taken and is within the required profile in **Attachment**  
30 **No. 1** and approved by the WSF Inspector.  
31

**NOTE:**

For purpose of bidding assume that **500 Square Feet (SF)** of hull will require grit blasting to SSPC-SP6, Commercial Blast Cleaning, using non-metallic abrasives. (Green Diamond 20/50 or equal and must be approved by the WSF Inspector). Upon completion of hull blasting, the contract will be adjusted upward or downward to account for the actual scope of blasting authorized by the WSF Inspector. Spot Power Tool clean to SP-11 when areas are so small that blasting is not justified.

- A. Grit blast areas of abrasion, corrosion or including repairs on the hull from the top of the bulwark, including the hand rails, down to the keel, including, sea chest, strainer plates and rudders to SSPC-SP 6, Commercial Blast Cleaning.
- B. The anti-fouling coating, for at least two inches (2") bordering the blasted area, shall be removed to existing ANTI-CORROSIVE COATINGS and feathered to a smooth surface and tight intact coating.

**13. PAINTING OF VESSEL HULL, ANTI-CORROSION COATING**  
**{MAINTENANCE}**

**NOTE:**

For bidding purposes, assume that **500 SF** of the hull will require the ANTI-CORROSIVE COATINGS. The Contract will be adjusted upward or downward, using the square footage determined in Grit Blasting Hull Item.

- A. Apply one (1) spot coat of **INTERGARD Epoxy Red, No. FPL274/FPA327** at 6 mils (DFT). Minimum interval before overcoating, cured hard. (Maximum interval 30 days), on all areas prepared in, GRIT BLAST HULL Item. Keep epoxy overlap to within six inches (6") of the edge.
- B. Apply one (1) spot coat of **INTERGARD Epoxy, Black No. FPY999/FPA327** at 6.0 mils (DFT). Apply antifouling at "thumbprint" stage on all areas painted in this Item.

**14. PAINTING OF VESSEL HULL, BELOW WATERLINE ANTI-FOULING**  
**(SPOT COAT)**  
**{MAINTENANCE}**

**NOTE:**

For bidding purposes, assume that **500 SF** of the hull will require the ANTI-FOULING COATINGS. The Contract will be adjusted upward or downward, using the square footage determined in Grit Blasting Hull Item.

1 A. Furnish and apply one (1) coat of **INTERVIRON RED ANTIFOULING No.**  
2 **BRA 640** at minimum 3.0 (DFT) to all surfaces painted below the waterline in  
3 Item 13. Minimum to overcoat with BRA 642 black, is cured hard.

4 **15. PAINTING OF VESSEL HULL, BELOW WATERLINE ANTI-FOULING**  
5 **(FULL COAT)**  
6 **{MAINTENANCE}**

7 A. Below the waterline, apply one (1) coat of **INTERVIRON BLACK**  
8 **ANTIFOULING BRA 642** to a minimum of 4 mils (DFT) on all surfaces.  
9 Allow fourteen (14) hours of drying time at 55F before immersion.

10 B. Apply **Y5584 shark white** antifouling to all draft marks and hull markings.

11 **16. PAINTING OF VESSEL HULL, ABOVE THE WATERLINE**  
12 **{MAINTENANCE}**

13 A. Above the water line, apply one (1) full coat of **INTERCARE 755 EPOXY**  
14 **GLOSS FINISH, BLACK, No. ESY999 and WSF GREEN No. ESA-89904,**  
15 at 3.0 mils (DFT).

16 **17. PREPARATION FOR TOPSIDE EXTERIOR PAINTING**  
17 **{STRUCTURAL PRESERVATION}**

18 A. Provide covering and protection on all cables, electrical boxes, light lens, all  
19 antennas, other Items and equipment that may be damaged by Grit/Water  
20 Blasting.

21 B. Provide protection for the exterior windows by covering them by plywood or  
22 other material and method that is approved by the WSF Inspector.

23 C. Clean all exterior windows upon completion of Painting of the Superstructure.  
24 Glass to be cleaned to remove all dirt, paint, water streaks and other foreign  
25 matter. Care will be taken to prevent scratching or any damage of window  
26 surface.

27 D. All protective coverings shall be inspected by the WSF Inspector and Vessel  
28 Staff Chief Engineer prior to blasting.  
29

1 **18. GRIT / HIGH PRESSURE BLASTING OF THE SUPERSTRUCTURE**  
2 {STRUCTURAL PRESERVATION}

3 **NOTE:**

4 The Contractor shall have the option to **UHP-WJ-2L Ultrahigh-Pressure Water**  
5 **Jetting** only if the profile is taken and is within the required profile in **Attachment No.**  
6 **1** and approved by the WSF Inspector.

7 A. Grit blasting the exterior of the Superstructure from the main deck to the top of  
8 the mast, including interior and exterior bulwarks from stern to bow, exhaust  
9 stacks, exterior overheads and other exterior areas from the hull deck to the top  
10 of the masts to an SSPC-SP6, Commercial Blast Cleaning, using non-metallic  
11 abrasives. (Green Diamond 20/50 material or equal). Spot power tool clean to  
12 SP 11 when areas are unable to apply SSPC-SP-6 or UHP-WJ-2L standard. All  
13 work and material require approval and Inspected by the WSF Inspector.

14 **NOTE:**

15 Extreme care must be exercised to prevent any damage of windows and their frames  
16 from over spray or any other type of damage.

17 B. Upon completion of all work clean all windows leaving no streaks, haze marks or  
18 scratches.

19 **19. ANTI-CORROSIVE COATING OF THE SUPERSTRUCTURE**  
20 {STRUCTURAL PRESERVATION}

21 A. Apply to all areas prepared in **Item 18**, one (1) full coat of **INTERGARD**  
22 **EPOXY RED**, No. FPL274/FCA321 at 3.0 mils (DFT). Minimum to overcoat is  
23 cured to hard.

24 B. Apply to all areas in para A, one (1) full coat of **INTERGARD EPOXY GRAY**,  
25 No. FPJ034/FCA32 at 3.0 mils (DFT). Minimum interval to overcoat with  
26 Intercare is cured hard.

27 **NOTE:**

28 For all areas that are unable to apply paint by spraying may be hand brush to required  
29 thickness, i.e. angles, frames and sharp edges.

30 **NOTE:**

31 Prior to applying paint, all sharp edges shall be filed to remove sharp edges to eliminate  
32 cracking of the paint.  
33

1   **20.   TOP COATING OF THE SUPERSTRUCTURE**  
2       **{STRUCTURAL PRESERVATION}**

- 3       A.     Apply to all areas painted in **Item 19**, one (1) full coat of **INTERCARE 755**  
4             **EPOXY, GLOSS FINISH**, at 2.0 mils (DFT). Apply appropriate colors as they  
5             were before Blasting, Gloss WSF Blue White No. ES-72942, WSF Green No.  
6             ES-89904 or Black ESY 999.
- 7       B.     Apply 2<sup>nd</sup> full coat to all areas painted in **Item 19**, one (1) full coat of  
8             **INTERCARE 755 EPOXY, GLOSS FINISH**, at 2.0 mils (DFT). Apply  
9             appropriate colors to all areas: Gloss WSF Blue White No. ES-72942, WSF  
10            Green No. ES-89904 or Black ESY 999.

11   **21.   ALL FOUR (4) PROPELLERS AND PROPELLER SHAFTS; REMOVAL,**  
12       **INSPECTION AND INSTALLATION**  
13       **{MAINTENANCE}**

- 14       A.     Remove all Propellers, Propeller shafts, Couplings and Packing Glands.

15       **NOTE:**

16       There are four (4) shafts and four (4) propellers on this Vessel.

17       **NOTE:**

18       The following drawings are supplied for guidance for all shaft related Items:  
19       **Attachment No. 3**, Dwg. No. G126 & G129; titled "Shaft Arrangement"; Rev. 3; dated  
20       12-1-88 and **Attachment No. 4**, Dwg. No. G1264G-129, titled "Strut Details", Rev 0,  
21       dated 12-7-88.

- 22       B.     Record clearances of shaft bearings prior to removal of shafting.

- 23       C.     Provide the services of a Marine Chemist to certify Engine Room "SAFE FOR  
24             HOT WORK". Monitor and maintain area as "SAFE FOR HOT WORK" until  
25             completion of work. Provide a fire watch as necessary during hot work.

- 26       D.     Disassemble the shaft stuffing boxes for removal of the shaft.

- 27       E.     Disconnect all Propeller shafts from engines and remove couplings from all  
28             Propeller shafts. Take and record engine to shaft alignment readings prior to  
29             removal of couplings.

30       **NOTE:**

31       Coupling removal may require application of heat and use of jacks.

- 1 F. Remove the shafts from Vessel to shop for inspection and any resulting repairs.  
2 Set up shafts in lathe and conduct a dial indicator check for straightness. Mount  
3 the couplings on the shafts and check the face of the coupling for trueness with a  
4 dial indicator.
- 5 G. Conduct a non-destructive test for cracks on the propeller, propeller shafts taper  
6 and coupling tapers, keys and keyways.
- 7 **NOTE:**  
8 Shafts are 4" diameter by 27' length, and are made of "Aquamet 17" stainless steel.
- 9 H. Submit a written report of findings to the WSF and USCG Inspector and the  
10 Vessel Staff Chief Engineer.
- 11 I. While the shafts are removed; inspect shaft bearings and strut alignments by  
12 stringing a piano wire through all bearing points, from engine room to aft of the  
13 strut barrel (or other approved method by the WSF Inspector). Measure and  
14 record distances between wire and bearings at the forward and aft ends of each  
15 bearing.
- 16 J. Replace with all new stern tube bearings and strut bearings (Purchased in Item  
17 22) and conduct a recheck of the alignment prior to install shafts.
- 18 K. Open, clean and prepare all four (4) stern tube packing glands for inspection by  
19 the WSF Inspector and the Vessel Staff Chief Engineer.
- 20 L. Install all Propellers shafts, couplings and packing Glands.
- 21 M. Install Propellers; and check the Propeller shaft and Propeller taper for proper fit,  
22 70 percent contact is the minimum to be accepted. Fitting of the Propeller shall  
23 be witnessed by WSF Inspector and the Vessel Staff Chief Engineer.
- 24 N. Tightening of Shaft nuts shall be witnessed by WSF Inspector and the Vessel  
25 Staff Chief Engineer.
- 26 O. Secure all Propeller shafts for undocking of Vessel.
- 27 P. Following the undocking of the Vessel, allow adequate time in the water to align  
28 the Propeller Shaft to engine connection, allow a minimum of six (6) hours after  
29 launch before shaft align is checked. Align all Engines to the shafts, alignment  
30 shall be within .003" on the face and periphery of the coupling. Final alignment  
31 shall be witnessed by the WSF Inspector and the Vessel Staff Chief Engineer.
- 32 Q. After the final alignment of engine to shaft, making up of coupling, and final  
33 adjustment of the package gland.

- 1 R. Prior Vessel departing shipyard, conduct a sea trial test to ensure the Propellers  
2 and Shafts, and Packing gland are operating correctly, ensure shaft packing is not  
3 over heating and is at the proper drip rate.

4 **22. FORWARD (INNER & OUTER) HULL AND STRUT BEARINGS**  
5 **REPLACEMENT**  
6 {MAINTENANCE}

- 7 A. While the shafts are out, remove the existing Forward Stern tubes (inner and  
8 outer) and Strut bearings for all four (4) shafts.

- 9 B. Clean and inspect the bearing bores.

- 10 C. Furnish and install eight (8) new stern tube (inner and outer) bearings and four  
11 (4) new Strut bearings, using **Attachment No. 3**, as a guide.

12 **23. REPAIR BOW DAMAGE**  
13 {MAINTENANCE}

- 14 A. Cut out and Remove all damaged bulwark plating, split pipe on top of bulwark  
15 plating, and hand rail in areas of the bow as directed by the WSF Inspector. For  
16 bidding purposes there is approximately four (4) square feet of bulwark plating,  
17 twenty (20) liner feet of split pipe and twenty (20) liner feet of hand rail to be  
18 replaced. **Attachment No. 5**, Dwg. No. G-1264G-129, Rev. 2; dated 10-5-88.

- 19 B. Provide labor, material and equipment to clean and gas free all spaces associated  
20 with the Work, as necessary, and obtain a Marine Chemist certificate for “SAFE  
21 FOR WORKERS”, and “SAFE FOR HOT WORK”. Maintain the certificate  
22 during the course of the Work. Provide fire watches as required

- 23 C. Install new bulwark plating insert, split pipe on top of bulwark plating, and hand  
24 rail. Prior to welding ensure WSF and Coast Guard Inspectors approve the fit up.  
25 Only Certified Aluminum welders shall be allowed to weld in all areas of this  
26 Vessel.

- 27 D. Upon completion of repairs, final testing shall be witness and approve to the  
28 satisfaction of the WSF and USCG Inspector, and the Vessel Staff Chief  
29 Engineer.

- 30 E. Testing for cracks shall be accomplished as approved by the WSF and Coast  
31 Guard Inspector, and the Vessel Staff Chief Engineer.  
32

1       **NOTE:**

2       The Contractor shall have the option to **UHP-WJ-2L Ultrahigh-Pressure Water**  
3       **Jetting** only if the required profile is within the requirements in **Attachment No. 1** or  
4       required by the Paint Manufacturer, and approved by the WSF Inspector.

5       F.       Grit blasting repaired areas to an SSPC-SP6, Commercial Blast Cleaning, using  
6       non-metallic abrasives. (Green Diamond 20/50 material or equal). Spot power  
7       tool clean to SP 11 when areas are unable to apply SSPC-SP-6 standard or UHP-  
8       WJ-2L. All work and material require approval and Inspected by the WSF  
9       Inspector.

10       G.       Apply one (1) full coat of **INTERGARD EPOXY RED**, No. FPL274/FCA321  
11       at 3.0 mils (DFT). Minimum to overcoat is cured to hard.

12       H.       Apply one (1) full coat of **INTERGARD EPOXY GRAY**, No. FPJ034/FCA32  
13       at 3.0 mils (DFT). Minimum interval to overcoat with Intercare is cured hard.

14       I.       Apply one (1) full coat of **INTERCARE 755 EPOXY, GLOSS FINISH**, at 2.0  
15       mils (DFT). Apply appropriate colors as they were before Blasting, Gloss WSF  
16       Blue White No. ES-72942, WSF Green No. ES-89904 or Black ESY 999.

17       J.       Apply 2<sup>nd</sup> full coat of **INTERCARE 755 EPOXY, GLOSS FINISH**, at 2.0 mils  
18       (DFT). Apply appropriate colors to all areas: Gloss WSF Blue White No. ES-  
19       72942, WSF Green No. ES-89904 or Black ESY 999.

20       **24.   REPLACEMENT OF SALT WATER OVERBOARD FOR A/C SYSTEM**  
21       **{MAINTENANCE}**

22       A.       Provide labor, material and equipment to clean and gas free all spaces associated  
23       with the Work, as necessary, and obtain a Marine Chemist certificate for “SAFE  
24       FOR WORKERS”, and “SAFE FOR HOT WORK”. Maintain the certificate  
25       during the course of the Work. Provide fire watches as required.

26       B.       Cut out and remove existing overboard water discharge outlet plate of the Old  
27       A/C system as shown on **Attachment No. 6**, Drawing No. “G1264G-129, titled  
28       “Docking Plan”, Dated 4-19-89, Rev. 1. Approximate size is six “6” to eight “8”  
29       inch insert of 5/16 in. Aluminum 5086 plate. Weld in new insert to match the  
30       removal piece.

31       C.       Upon completion of repairs, final testing shall be witnessed and approved to the  
32       satisfaction of the WSF and USCG Inspector, and the Vessel Staff Chief  
33       Engineer.



- 1           D.     Testing for cracks shall be accomplished as approved by the WSF and Coast
- 2                 Guard Inspector, and the Vessel Staff Chief Engineer.
- 3           E.     This Item shall be prepared and painted within the Hull Painting Items within this
- 4                 Contract.

**( END )**